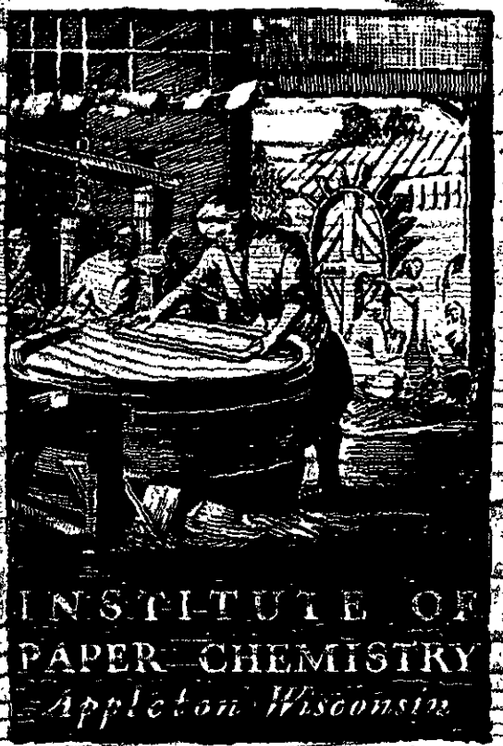

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 45

to

FOURDRINIER KRAFT BOARD INSTITUTE

April 1, 1951

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

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APPLETON, WISCONSIN

In conjunction with the F.K.I. Continuous Baseline Study, seventy-three different sample lots of 42-lb. Fourdrinier kraft linerboard were submitted by nine different F.K.I. mills to The Institute of Paper Chemistry for testing during the period March 1 through March 31. In addition to the 42-lb. kraft linerboard, nine samples of special drum stock were also submitted for evaluation by one of the participating mills. The results on the special stock are tabulated separately in this report. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I

DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	10
B	16
C	0
D	13
E	0
F	6
G	6
H	4
I	7
J	6
L	5
	73

These sample lots were tested for basis weight, caliper, bursting strength, G. E. puncture, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 6. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. averages include all the results up to but not including the current period; the current period in the case of this report is March 1 through March 31. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 42.7 lb., and the cumulative F.K.I. average basis weight is 43.1 lb. Hence, the index for basis weight determined in per cent as indicated above is 99.1. This signifies that the current average basis weight is lower than the cumulative average, which in this case covered the period from July 25, 1947, through February 28, 1951.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all the mills except Mill F conform to the 42-lb. specification set forth in Rule 41. Mill B has the highest average basis weight, it being 43.4 lb. or approximately 3.3% higher than the 42-lb. specification. On the other hand, Mill F has the lowest average basis weight, it being 41.7 lb., 0.7% lower than the 42-lb. specification.

The amount by which the mills exceed the 42-lb. specification is as follows:

Mill Code	Per Cent
A	2.4
B	3.3
C	--
D	1.9
E	--
F	-0.7
G	1.7
H	1.7
I	1.4
J	2.1
L	1.4

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that the basis weight results have increased slightly.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the mill averages vary from a low of 12.6 for Mill F to a high of 13.9 for Mills B and I, the average being 13.3 which is somewhat lower than the cumulative average of 14.3.

The average bursting strength values obtained for each mill are presented graphically in Figure 3. It may be observed that the average bursting strength values for the various mills range from a low of 101 for Mills B and G to a high of 113 for Mill D. The current

F.K.I. average bursting strength is 105, slightly lower than the cumulative average of 106.

The data of Table II and Figure 4 show that the average G. E. puncture result for all mills is 35 units. Mill F has the highest G. E. puncture average, 39 units, and Mill I the lowest average, 32 units. The current F.K.I. average for G. E. puncture of 35 units is somewhat lower than the cumulative F.K.I. average of 37 units.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The data of Table II show that Mill D has the highest average machine direction tear value and Mill I the lowest. Mill D also has the highest average across-machine direction tear value, whereas Mill G has the lowest value. It may be noted that the current F.K.I. average machine and across-machine direction tear results are lower than the cumulative averages.

A comparison of the F.K.I. indexes indicates that, for the current period, all the current F.K.I. averages are lower than the respective cumulative F.K.I. averages.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XIII for Mills A to L, respectively. In addition to the current and cumulative averages, the mill factor and mill index are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill up to, but not including, the current average. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index serve as a ready means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. As the test data accumulate, the factors and indexes acquire added significance. The reports also contain a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry.

The results obtained on the special drum stock may be seen in Table XIV.

It may be noted in Tables III through XIII that the data have been separated on the basis of the sheet finish. The summarized results are as follows:

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
A	10*		
B	16*		
C	--	--	--
D	8	5	
E	--	--	--
F	6		
G	6		
H	4*		
I	7*		
J			6**
L	--	--	--

* One side only
**Semi-water finish.

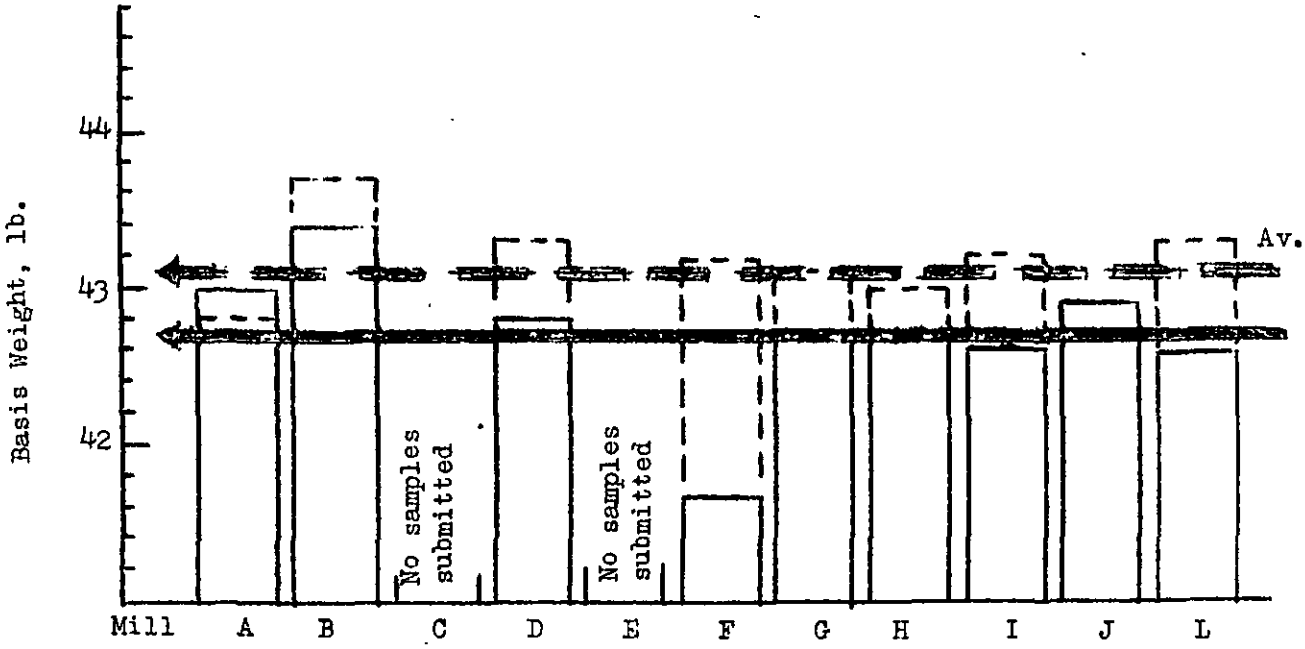
The results indicate that a majority of the mills are using a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--MARCH 1 THROUGH MARCH 31, 1951

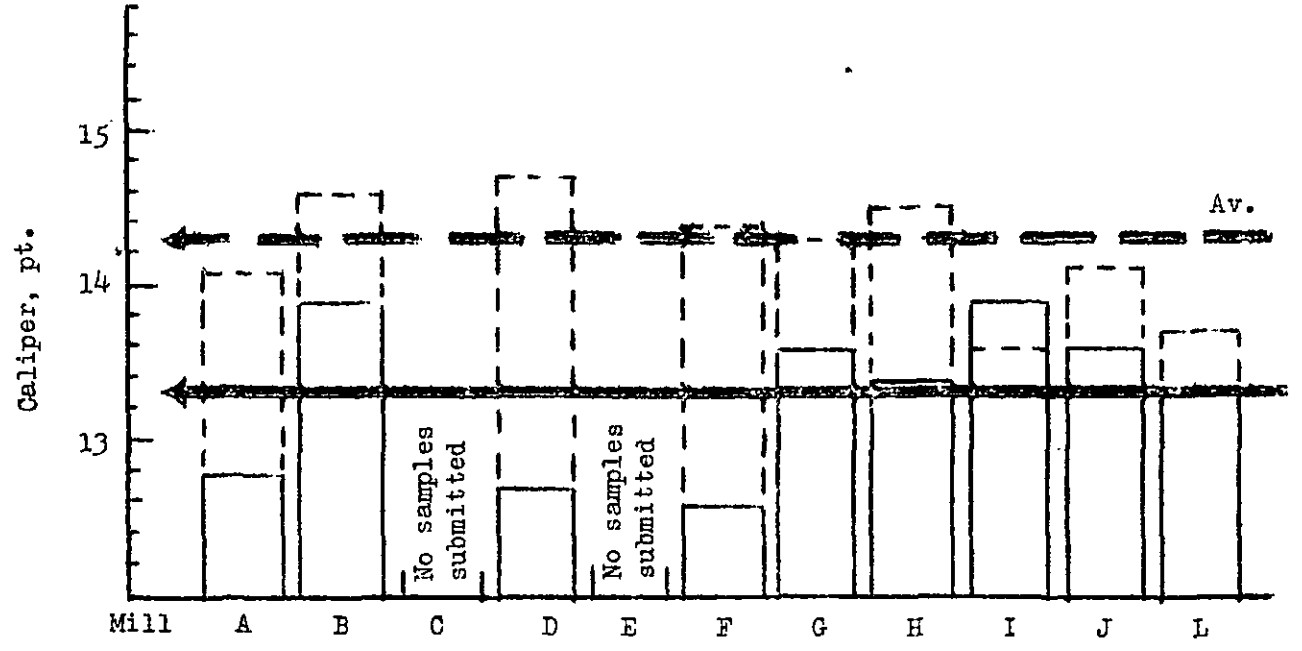
Code No	Basis Weight, lb.	Caliper, points	Bursting Strength, points	G. E. Puncture, units	Elmendorf Tear, g./sheet In Direction	Elmendorf Tear, g./sheet Across Direction
A	43.0	12.8	112	34	353	395
B	43.4	13.9	101	33	361	40[illegible]
C	No samples submitted.					
D	42.8	12.7	113	37	395	416
E	No samples submitted.					
F	41.7	12.6	103	39	372	415
G	42.7	13.6	101	35	342	366
H	42.7	13.4	104	34	360	393
I	42.6	13.9	102	32	339	405
J	42.9	13.6	103	34	367	380
L	42.6	13.3	104	35	367	387
Current FKI Average:	42.7	13.3	105	35	362	395
Cumulative FKI Average:	43.1	14.3	106	37	379	412
FKI Index, %:	99.1	93.0	99.1	94.6	95.5	95.9

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period March 1 - March 31)

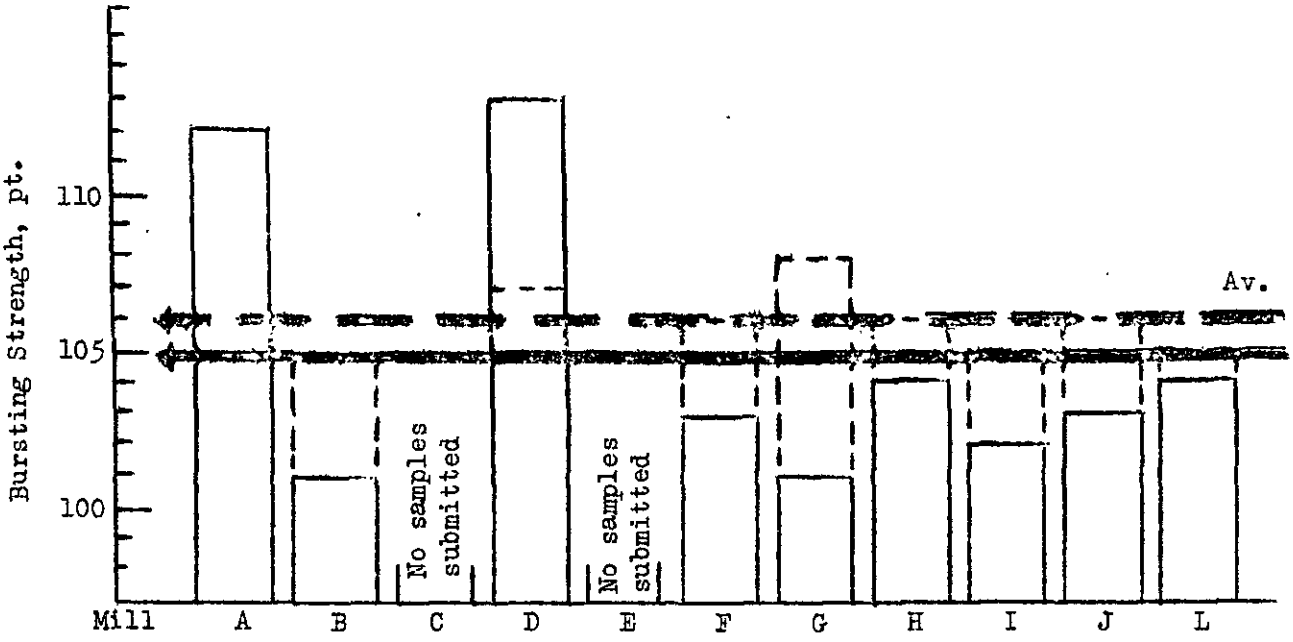
Figure 2



COMPARISON OF CALIPER RESULTS
(Period March 1 - March 31)

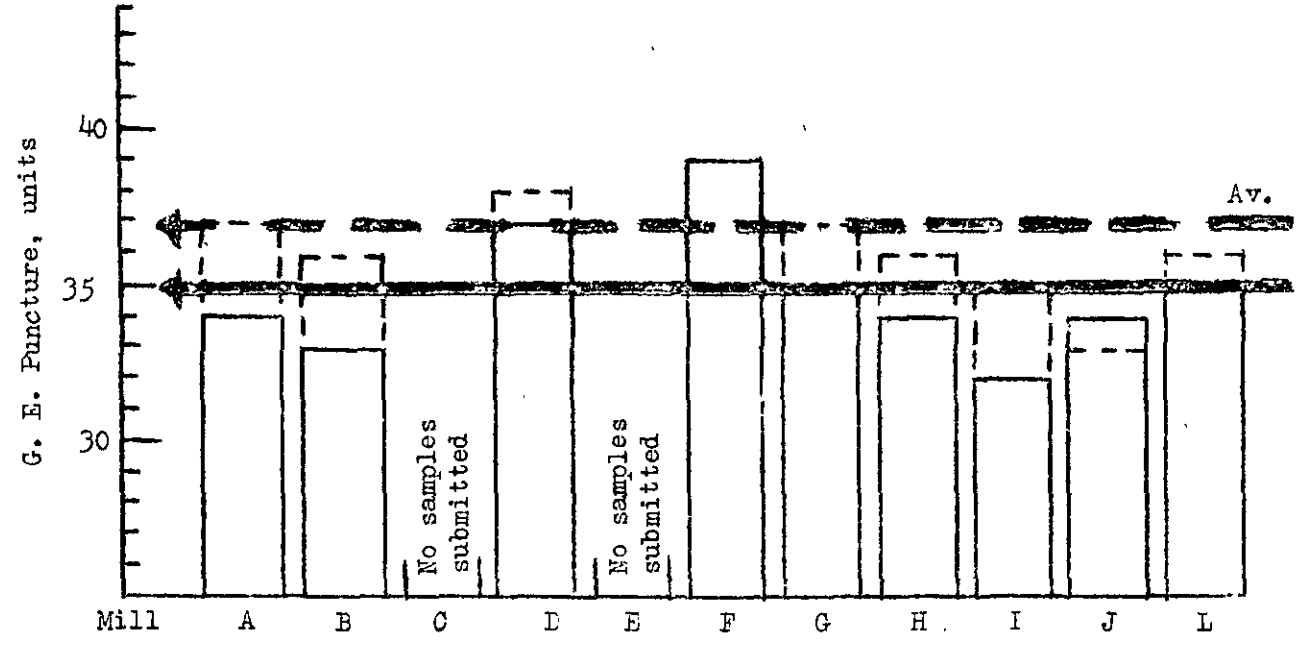
——— Current Mill Average
- - - - Cumulative Average

Figure 3



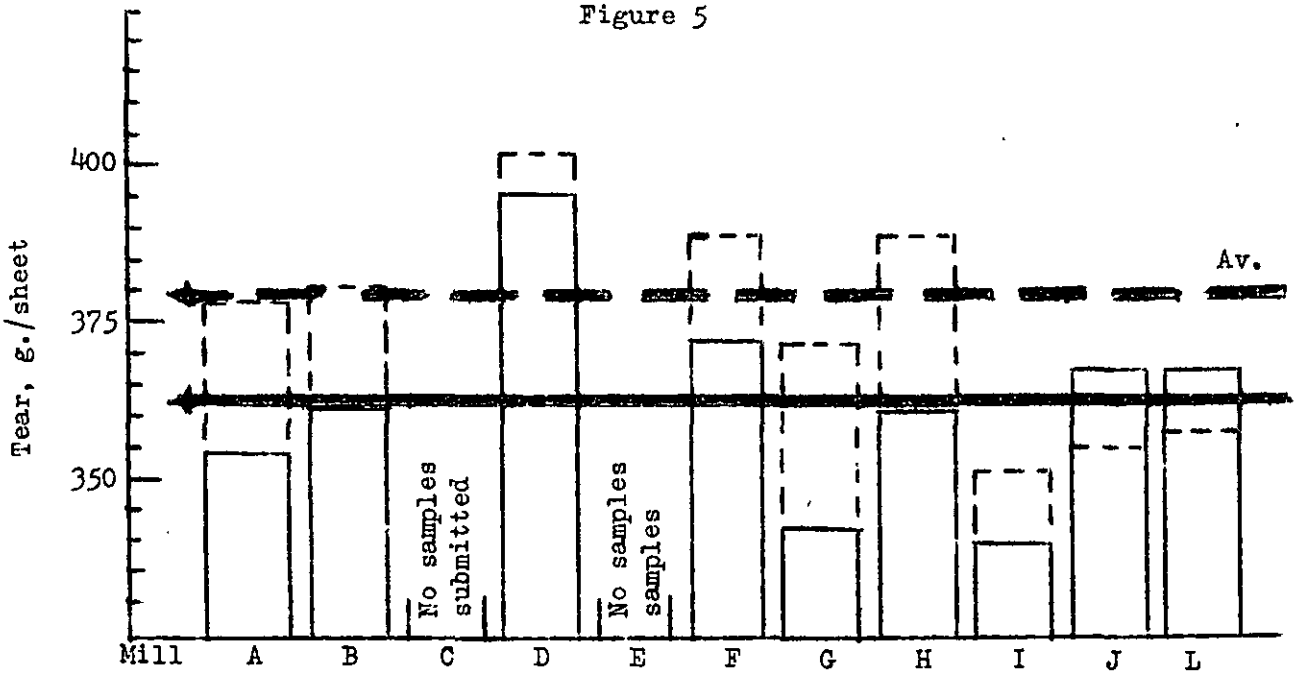
COMPARISON OF BURSTING STRENGTH RESULTS
(Period March 1 - March 31)

Figure 4



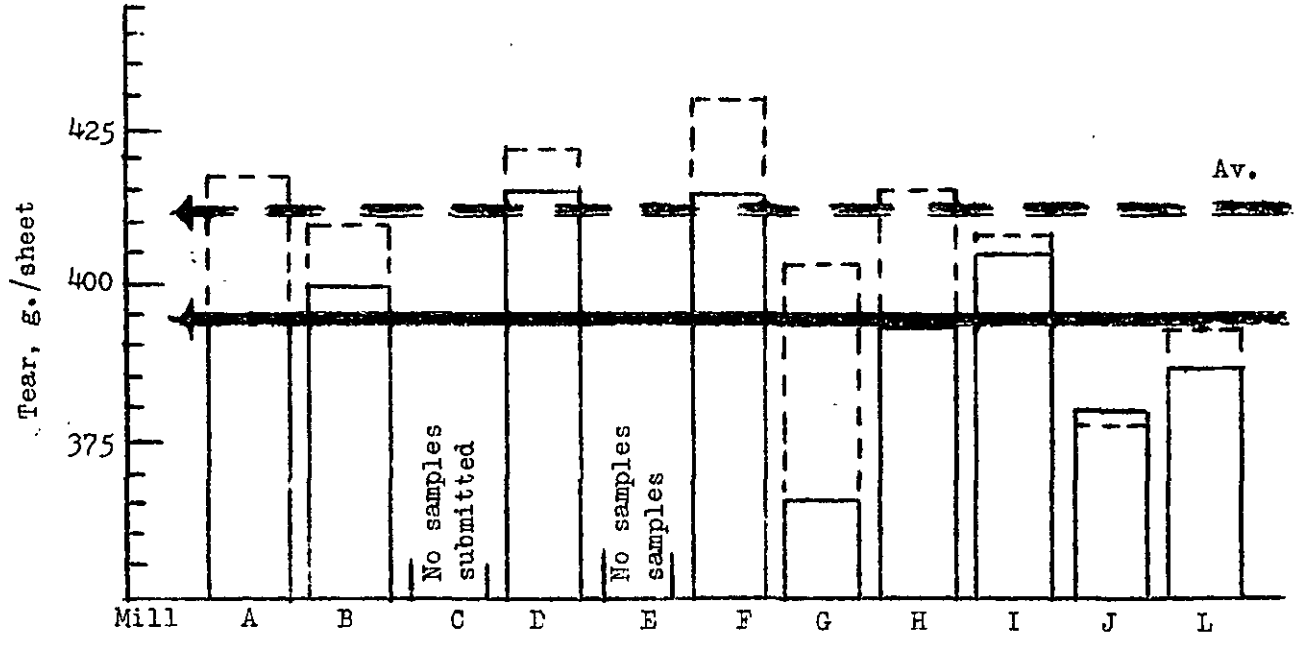
COMPARISON OF G. E. PUNCTURE RESULTS
(Period March 1 - March 31)

Figure 5



COMPARISON OF TEAR RESULTS, Machine Direction
(Period March 1 - March 31)

Figure 6



COMPARISON OF TEAR RESULTS, Across-machine Direction
(Period March 1 - March 31)

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951

Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet					
													In			Across		
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
Mill A--42-lb. Linerboard																		
2	43.6	42.0	42.4	13.9	11.6	12.7	113	83	101	36	31	33	432	304	382[a]	448	344	380[a]
2	43.2	41.0	42.4	13.8	12.3	12.9	120	75	104	35	30	32	416	256	343[a]	432	320	371[a]
2	44.0	42.6	43.3	14.5	13.3	14.0	130	83	112	37	30	33	432	328	372[a]	440	368	408[a]
2	44.0	42.4	43.4	14.6	13.4	13.9	127	95	112	36	31	33	456	312	367[a]	456	368	417[a]
1	43.4	42.0	42.5	13.8	12.4	13.0	133	96	116	38	30	33	344	264	310	456	320	386[a]
1	43.4	42.0	42.7	13.4	12.1	12.9	134	88	118	36	32	34	352	264	308	424	328	373[a]
2	45.4	43.6	44.6	13.0	12.0	12.5	146	100	118	38	33	36	432	320	365[a]	432	368	409[a]
2	45.4	43.8	44.4	13.0	11.9	12.4	152	97	117	39	32	35	472	320	372	480	368	417[a]
2	42.6	40.4	42.1	12.0	11.0	11.6	138	96	111	37	32	34	408	304	359[a]	464	352	395[a]
2	43.0	41.8	42.2	12.8	11.4	11.9	134	73	113	37	30	34	448	288	355[a]	456	352	399[a]
			43.0			12.8			112			34			353			395
			42.8			14.1			105			37			377			418
			100.5			90.8			106.7			91.9			93.6			94.5
			99.8			89.5			105.7			91.9			93.1			95.9

[a] or one or more specimens which tore beyond the 3/8-inch limit.

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Elmendorf Tear, In Max.	Elmendorf Tear, In Min.
											Mill A--42-lb. Linerboard								
145811	A-218	WFlS	3/ 1/51	2/19/51	2	43.6	42.0	42.4	13.9	11.6	12.7	113	83	101	36	31	33	432	304
145812	A-219	WFlS	3/ 1/51	2/20/51	2	43.2	41.0	42.4	13.8	12.3	12.9	120	75	104	35	30	32	416	256
145847	A-220	WFlS	3/ 5/51	2/28/51	2	44.0	42.6	43.3	14.5	13.3	14.0	130	83	112	37	30	33	432	328
145848	A-221	WFlS	3/ 5/51	2/28/51	2	44.0	42.4	43.4	14.6	13.4	13.9	127	95	112	36	31	33	456	312
145918	A-222	WFlS	3/10/51	3/ 5/51	1	43.4	42.0	42.5	13.8	12.4	13.0	133	96	116	38	30	33	344	264
145919	A-223	WFlS	3/10/51	3/ 5/51	1	43.4	42.0	42.7	13.4	12.1	12.9	134	88	118	36	32	34	352	264
146081	A-224	WFlS	3/23/51	3/17/51	2	45.4	43.6	44.6	13.0	12.0	12.5	146	100	118	38	33	36	432	320
146082	A-225	WFlS	3/23/51	3/17/51	2	45.4	43.8	44.4	13.0	11.9	12.4	152	97	117	39	32	35	472	320
146095	A-226	WFlS	3/24/51	3/18/51	2	42.6	40.4	42.1	12.0	11.0	11.6	138	96	111	37	32	34	408	304
146096	A-227	WFlS	3/24/51	3/18/51	2	43.0	41.8	42.2	12.8	11.4	11.9	134	73	113	37	30	34	448	288
Current Mill Average:								43.0			12.8			112			34		
Cumulative Mill Average:								42.8			14.1			105			37		
Mill Factor, %:								100.5			90.8			106.7			91.9		
Mill Index, %:								99.8			89.5			105.7			91.9		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

e te	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet					
														In			Across		
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
					Mill B--42-lb. Linerboard														
/51	1	42.6	40.8	41.7	14.1	12.8	13.4	139	90	110	33	28	30	368	248	318[a]	464	312	377[a]
/51	1	42.4	40.4	41.2	13.9	12.5	13.2	127	81	103	35	25	31	376	280	337	472	352	383[a]
/51	1	43.0	41.0	42.0	14.0	12.7	13.4	121	88	105	33	26	31	448	304	347[a]	400	320	373[a]
/51	1	44.0	42.0	43.3	15.0	12.4	13.7	127	86	106	37	29	33	448	304	399[a]	464	352	405[a]
/51	1	43.8	42.4	43.0	14.4	13.2	13.8	123	86	100	38	32	34	440	304	359[a]	464	360	408[a]
/51	1	43.4	41.8	42.5	14.6	12.6	13.9	122	72	96	37	31	34	416	312	357[a]	456	336	399[a]
/51	1	43.4	41.8	42.6	14.7	13.0	13.7	125	72	99	36	30	33	416	272	349[a]	472	344	413[a]
/51	1	43.2	41.6	42.4	14.9	12.7	13.8	115	79	96	36	30	33	400	320	353	432	304	379[a]
/51	1	46.4	43.2	44.6	15.0	13.4	14.2	126	63	101	38	33	35	448	304	367[a]	464	368	415[a]
/51	1	46.0	43.4	44.2	14.8	13.0	14.0	131	82	102	38	31	34	400	304	369	472	352	416[a]
/51	1	46.2	43.8	44.5	14.6	13.5	14.3	119	72	98	38	30	34	464	312	376[a]	440	336	396[a]
/51	1	47.2	44.2	45.1	15.1	13.2	14.2	120	83	102	38	32	35	424	352	376[a]	488	368	422[a]
/51	1	45.4	43.6	44.4	15.2	13.4	14.3	118	80	101	37	31	34	464	304	366[a]	448	376	405[a]
/51	1	46.2	43.2	44.1	14.6	13.3	14.2	122	71	103	38	29	34	408	312	370	448	360	396[a]
/51	1	45.0	43.8	44.4	14.9	13.9	14.2	118	76	100	38	31	34	424	312	359	464	336	405[a]
/51	1	46.0	44.2	44.6	14.9	12.9	14.0	113	75	99	38	32	35	440	336	374	472	352	408[a]
				43.4			13.9			101			33			361			400
				43.7			14.6			105			36			380			409
				99.3			95.2			96.2			91.7			95.0			97.8
				100.7			97.2			95.3			89.2			95.3			97.1

[a] for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elm	
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	In Min.
									Mill B--42-lb. Linerboard										
145896	B-367	WF1S	3/ 8/51	3/ 1/51	1	42.6	40.8	41.7	14.1	12.8	13.4	139	90	110	33	28	30	368	248
145897	B-368	WF1S	3/ 8/51	3/ 1/51	1	42.4	40.4	41.2	13.9	12.5	13.2	127	81	103	35	25	31	376	280
145898	B-369	WF1S	3/ 8/51	3/ 1/51	1	43.0	41.0	42.0	14.0	12.7	13.4	121	88	105	33	26	31	448	304
145899	B-370	WF1S	3/8/ 51	3/ 1/51	1	44.0	42.0	43.3	15.0	12.4	13.7	127	86	106	37	29	33	448	304
145956	B-371	WF1S	3/13/51	3/ 4/51	1	43.8	42.4	43.0	14.4	13.2	13.8	123	86	100	38	32	34	440	304
145957	B-372	WF1S	3/13/51	3/ 4/51	1	43.4	41.8	42.5	14.6	12.6	13.9	122	72	96	37	31	34	416	312
145958	B-373	WF1S	3/13/51	3/ 4/51	1	43.4	41.8	42.6	14.7	13.0	13.7	125	72	99	36	30	33	416	272
145959	B-374	WF1S	3/13/51	3/ 4/51	1	43.2	41.6	42.4	14.9	12.7	13.8	115	79	96	36	30	33	400	320
146145	B-375	WF1S	3/31/51	3/23/51	1	46.4	43.2	44.6	15.0	13.4	14.2	126	63	101	38	33	35	448	304
146146	B-376	WF1S	3/31/51	3/23/51	1	46.0	43.4	44.2	14.8	13.0	14.0	131	82	102	38	31	34	400	304
146147	B-377	WF1S	3/31/51	3/23/51	1	46.2	43.8	44.5	14.6	13.5	14.3	119	72	98	38	30	34	464	312
146148	B-378	WF1S	3/31/51	3/23/51	1	47.2	44.2	45.1	15.1	13.2	14.2	120	83	102	38	32	35	424	352
146149	B-379	WF1S	3/31/51	3/25/51	1	45.4	43.6	44.4	15.2	13.4	14.3	118	80	101	37	31	34	464	304
146150	B-380	WF1S	3/31/51	3/25/51	1	46.2	43.2	44.1	14.6	13.3	14.2	122	71	103	38	29	34	408	312
146151	B-381	WF1S	3/31/51	3/25/51	1	45.0	43.8	44.4	14.9	13.9	14.2	118	76	100	38	31	34	424	312
146152	B-382	WF1S	3/31/51	3/25/51	1	46.0	44.2	44.6	14.9	12.9	14.0	113	75	99	38	32	35	440	336
Current Mill Average:								43.4			13.9			101			33		
Cumulative Mill Average:								43.7			14.6			105			36		
Mill Factor, %:								99.3			95.2			96.2			91.7		
Mill Index, %:								100.7			97.2			95.3			89.2		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Mch. No.		Basis Weight, lb. Max.	Min.	Av.	Caliper, points Max.	Min.	Av.	Bursting Strength, points Max.	Min.	Av.	G. E. Puncture, units Max.	Min.	Av.	Elmendorf Tear, g./sheet In Max.	Min.	Av.	Across Max.	Min.	Av.
								Mill C--42-lb. Linerboard											
		No samples submitted.																	
								TABLE VI											
								Mill D--42-lb. Linerboard											
1	4	44.6	43.0	43.9	14.9	12.8	13.6	140	86	109	40	36	38	456	352	410[a]	496	400	431[a]
1	4	44.0	42.0	43.4	14.0	12.3	13.1	151	90	116	42	35	39	440	368	400[a]	496	376	432[a]
1	4	43.4	42.0	42.9	13.9	12.0	12.8	134	83	108	43	36	39	464	384	415[a]	472	384	427[a]
1	4	43.8	42.4	43.0	13.3	11.7	12.4	156	83	115	41	34	37	416	368	387	464	352	422[a]
1	4	44.2	42.0	43.2	13.0	11.8	12.4	128	99	114	39	33	35	440	352	395[a]	432	328	401[a]
1	4	42.8	41.8	42.3	13.1	11.4	12.4	133	89	113	39	32	36	440	336	393[a]	496	344	426[a]
1	4	43.2	40.8	42.3	13.1	11.6	12.4	141	77	109	42	34	38	448	320	377[a]	448	320	398[a]
1	4	43.6	42.4	43.1	13.8	12.6	13.1	133	82	111	43	39	41	472	384	423[a]	456	368	425[a]
1	4	42.4	40.0	41.2	12.9	11.4	12.1	130	87	113	40	33	36	456	320	387[a]	472	344	394[a]
1	4	43.4	41.8	42.9	14.1	12.0	12.6	126	78	112	41	35	38	496	360	401[a]	448	352	407a
1	4	43.6	41.8	42.5	13.9	12.5	13.2	137	90	119	40	35	37	432	328	375	464	352	402[a]
1	4	44.6	42.4	43.5	13.4	12.0	12.7	146	100	120	39	33	36	472	336	400[a]	480	360	424[a]
1	4	43.4	42.0	42.6	14.3	12.0	12.9	154	95	115	38	34	36	432	344	377[a]	464	360	422[a]
				42.8			12.7			113			37			395			416
				43.3			14.7			107			38			401			422
				98.8			86.4			105.6			97.4			98.5			98.6
				99.3			88.8			106.6			100.0			104.2			101.0

for one or more specimens which tore beyond the 3/8-inch limit.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Elm In Max.	Elm In Min.
											Mill C--42-lb. Linerboard								
No samples submitted.																			

TABLE VI

Mill D--42-lb. Linerboard

145884	D-364	D.F.	3/ 7/51	3/ 4/51	4	44.6	43.0	43.9	14.9	12.8	13.6	140	86	109	40	36	38	456	352
145900	D-365	D.F.	3/ 8/51	3/ 5/51	4	44.0	42.0	43.4	14.0	12.3	13.1	151	90	116	42	35	39	440	368
145893	D-366	D.F.	3/ 8/51	3/ 6/51	4	43.4	42.0	42.9	13.9	12.0	12.8	134	83	108	43	36	39	464	384
145894	D-367	W.F.	3/ 8/51	3/ 7/51	4	43.8	42.4	43.0	13.3	11.7	12.4	156	83	115	41	34	37	416	368
145926	D-368	W.F.	3/12/51	3/ 8/51	4	44.2	42.0	43.2	13.0	11.8	12.4	128	99	114	39	33	35	440	352
145961	D-369	W.F.	3/14/51	3/10/51	4	42.8	41.8	42.3	13.1	11.4	12.4	133	89	113	39	32	36	440	336
145962	D-370	W.F.	3/14/51	3/11/51	4	43.2	40.8	42.3	13.1	11.6	12.4	141	77	109	42	34	38	448	320
145973	D-371	D.F.	3/15/51	3/12/51	4	43.6	42.4	43.1	13.8	12.6	13.1	133	82	111	43	39	41	472	384
146008	D-372	W.F.	3/17/51	3/13/51	4	42.4	40.0	41.2	12.9	11.4	12.1	130	87	113	40	33	36	456	320
146009	D-373	W.F.	3/17/51	3/14/51	4	43.4	41.8	42.9	14.1	12.0	12.6	126	78	112	41	35	38	496	360
146021	D-374	W.F.	3/19/51	3/15/51	4	43.6	41.8	42.5	13.9	12.5	13.2	137	90	119	40	35	37	432	328
146123	D-375	W.F.	3/28/51	3/24/51	4	44.6	42.4	43.5	13.4	12.0	12.7	146	100	120	39	33	36	472	336
146153	D-376	D.F.	3/31/51	3/28/51	4	43.4	42.0	42.6	14.3	12.0	12.9	154	95	115	38	34	36	432	344
Current Mill Average:								42.8			12.7			113			37		
Cumulative Mill Average:								43.3			14.7			107			38		
Mill Factor, %:								98.8			86.4			105.6			97.4		
Mill Index, %:								99.3			88.8			106.6			100.0		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Mch. No.		Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
							Mill E--42-lb. Linerboard												
		No samples submitted.																	

TABLE VIII

							Mill F--42-lb. Linerboard												
L	--	42.4	40.6	41.5	13.5	11.0	12.3	130	88	110	39	34	36	432	328	370[a]	480	384	438[a]
L	--	43.4	41.4	42.5	13.1	11.0	12.2	130	94	110	42	38	40	392	320	344	432	344	397[a]
L	--	44.2	41.6	43.2	14.5	11.5	13.1	117	81	103	44	38	41	400	344	375	480	400	423[a]
L	--	42.2	40.8	41.6	14.0	11.5	12.7	122	83	98	43	36	39	368	328	355	472	336	412[a]
L	--	41.8	40.4	41.0	13.4	10.9	12.5	116	71	95	42	39	40	480	344	418[a]	472	352	415[a]
L	--	41.0	40.0	40.3	13.1	11.8	12.4	111	81	100	42	36	40	424	336	369[a]	472	368	405[a]
				41.7			12.6			103			39			372			415
				43.2			14.4			106			39			388			430
				96.5			87.5			97.2			100.0			95.9			96.5
				96.8			88.1			97.2			105.4			98.2			100.7

for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	El Max.	El Min
									Mill E--42-lb. Linerboard										
No samples submitted.																			

TABLE VIII

									Mill F--42-lb. Linerboard										
145881	F-16	W.F.	3/ 7/51	2/20/51	--	42.4	40.6	41.5	13.5	11.0	12.3	130	88	110	39	34	36	432	328
145882	F-17	W.F.	3/ 7/51	2/22/51	--	43.4	41.4	42.5	13.1	11.0	12.2	130	94	110	42	38	40	392	320
145883	F-18	W.F.	3/ 7/51	2/27/51	--	44.2	41.6	43.2	14.5	11.5	13.1	117	81	103	44	38	41	400	344
145972	F-19	W.F.	3/15/51	3/ 2/51	--	42.2	40.8	41.6	14.0	11.5	12.7	122	83	98	43	36	39	368	328
146043	F-20	W.F.	3/21/51	3/ 5/51	--	41.8	40.4	41.0	13.4	10.9	12.5	116	71	95	42	39	40	480	344
146044	F-21	W.F.	3/21/51	3/13/51	--	41.0	40.0	40.3	13.1	11.8	12.4	111	81	100	42	36	40	424	336
Current Mill Average:								41.7			12.6			103			39		
Cumulative Mill Average:								43.2			14.4			106			39		
Mill Factor, %:								96.5			87.5			97.2			100.0		
Mill Index, %:								96.8			88.1			97.2			105.4		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

	Mch. No.	Basis Weight, lb. Max.	Min.	Av.	Caliper, points Max.	Min.	Av.	Bursting Strength, points Max.	Min.	Av.	G. E. Puncture, units Max.	Min.	Av.	Elmendorf Tear, g./sheet In Max.	Min.	Av.	Across Max.	Min.	Av.
							Mill G--42-lb. Linerboard												
'51	1	43.6	42.2	43.1	15.3	13.6	14.4	119	81	99	41	35	38	440	296	351[a]	432	352	384[a]
'51	1	43.8	41.0	42.9	14.5	12.0	13.2	128	81	102	38	34	36	368	288	339	424	344	377[a]
'51	1	42.8	41.6	42.3	15.0	13.2	14.3	117	78	104	36	30	34	400	304	345[a]	392	336	365[a]
'51	1	44.4	42.2	43.3	14.0	12.1	13.1	140	92	110	39	34	36	400	288	353[a]	408	352	382[a]
'51	1	43.8	42.0	42.8	14.3	12.3	13.3	120	68	97	34	30	32	368	304	335[a]	384	320	353[a]
'51	1	43.0	41.4	42.0	14.1	12.2	13.0	111	79	96	36	29	31	368	304	327[a]	392	312	337[a]
				42.7			13.6			101			35			342			366
				43.1			14.3			108			37			371			403
				99.1			95.1			93.5			94.6			92.2			90.8
				99.1			95.1			95.3			94.6			90.2			88.8

TABLE X

							Mill H--42-lb. Linerboard												
'51	2	44.2	41.6	42.5	13.8	12.8	13.3	130	77	105	37	31	33	400	312	345	424	320	381[a]
'51	2	44.6	41.0	42.7	14.3	13.1	13.5	132	88	105	38	32	35	432	304	369	472	352	413[a]
'51	2	44.2	41.6	43.0	14.0	12.4	13.2	120	91	106	39	32	35	440	304	371	440	384	410[a]
'51	2	43.2	41.8	42.5	13.9	13.0	13.3	126	75	101	34	30	32	392	312	355	440	336	368[a]
				42.7			13.4			104			34			360			393
				43.0			14.5			106			36			388			416
				99.3			92.4			98.1			94.4			92.8			94.5
				99.1			93.7			98.1			91.9			95.0			95.4

[a] for one or more specimens which tore beyond the 3/8-inch limit.

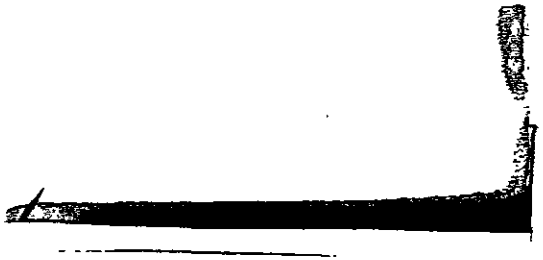


TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Elmendorf, g In Max.	Elmendorf, g In Min.
Mill G--42-lb. Linerboard																			
145852	G-330	WFL	3/ 5/51	3/ 1/51	1	43.6	42.2	43.1	15.3	13.6	14.4	119	81	99	41	35	38	440	296
145853	G-331	WFL	3/ 5/51	3/ 1/51	1	43.8	41.0	42.9	14.5	12.0	13.2	128	81	102	38	34	36	368	288
145916	G-332	WFL	3/ 9/51	3/ 4/51	1	42.8	41.6	42.3	15.0	13.2	14.3	117	78	104	36	30	34	400	304
145917	G-333	WFL	3/ 9/51	3/ 6/51	1	44.4	42.2	43.3	14.0	12.1	13.1	140	92	110	39	34	36	400	288
146154	G-334	WFL	3/31/51	3/25/51	1	43.8	42.0	42.8	14.3	12.3	13.3	120	68	97	34	30	32	368	304
146155	G-335	WFL	3/31/51	3/25/51	1	43.0	41.4	42.0	14.1	12.2	13.0	111	79	96	36	29	31	368	304
Current Mill Average:								42.7			13.6			101			35		
Cumulative Mill Average:								43.1			14.3			108			37		
Mill Factor, %:								99.1			95.1			93.5			94.6		
Mill Index, %:								99.1			95.1			95.3			94.6		

TABLE X

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Elmendorf, g In Max.	Elmendorf, g In Min.
Mill H--42-lb. Linerboard																			
146015	H-235	WF1S	3/19/51	2/11/51	2	44.2	41.6	42.5	13.8	12.8	13.3	130	77	105	37	31	33	400	312
146016	H-236	WF1S	3/19/51	2/12/51	2	44.6	41.0	42.7	14.3	13.1	13.5	132	88	105	38	32	35	432	304
146017	H-237	WF1S	3/19/51	3/ 2/51	2	44.2	41.6	43.0	14.0	12.4	13.2	120	91	106	39	32	35	440	304
146018	H-238	WF1S	3/19/51	3/ 3/51	2	43.2	41.8	42.5	13.9	13.0	13.3	126	75	101	34	30	32	392	312
Current Mill Average:								42.7			13.4			104			34		
Cumulative Mill Average:								43.0			14.5			106			36		
Mill Factor, %:								99.3			92.4			98.1			94.4		
Mill Index, %:								99.1			93.7			98.1			91.9		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XI

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Elmendorf Tear, g./sheet In Max.	Elmendorf Tear, g./sheet In Min.	Elmendorf Tear, g./sheet In Av.	Elmendorf Tear, g./sheet Across Max.	Elmendorf Tear, g./sheet Across Min.	Elmendorf Tear, g./sheet Across Av.
								Mill I--42-lb. Linerboard												
L	1	43.2	42.4	42.7	13.8	12.3	13.0	127	90	110	34	30	32	368	288	327[a]	440	344	395[a]
L	1	43.0	42.0	42.4	14.2	12.8	13.7	131	96	114	37	32	34	424	304	351[a]	456	384	415[a]
L	1	43.2	40.4	42.0	15.3	13.7	14.2	117	72	93	35	29	32	416	288	344[a]	448	352	391[a]
L	1	44.6	42.0	42.9	15.1	13.8	14.4	120	79	100	36	30	33	392	304	342[a]	520	344	411[a]
L	1	43.4	42.0	42.6	13.7	12.2	12.9	120	92	106	33	29	31	360	296	330	448	336	391[a]
L	1	43.4	41.8	42.9	15.4	13.6	14.5	117	80	96	35	30	32	384	280	339[a]	520	352	417[a]
L	1	43.6	42.2	42.6	15.5	13.6	14.3	115	69	96	36	29	33	392	304	341[a]	464	360	412[a]
				42.6			13.9			102			32			339			405
				43.2			13.7			105			35			351			408
				98.6			102.2			97.1			91.4			96.6			99.3
				98.8			97.2			96.2			86.5			89.4			98.3

TABLE XII

Mill J--42-lb. Linerboard

L	1	44.0	42.4	43.3	14.0	12.6	13.3	117	92	104	39	31	35	432	328	382[a]	464	376	404[a]
L	1	43.8	42.0	42.8	13.6	11.8	13.1	124	92	107	38	34	36	408	328	374[a]	456	352	392[a]
L	1	43.8	42.0	42.8	14.2	13.2	13.8	111	76	100	36	31	34	432	304	351[a]	408	312	371[a]
L	1	43.8	42.0	43.1	14.8	13.7	14.2	129	88	104	35	31	32	464	320	368[a]	416	320	366[a]
L	1	44.0	41.2	42.7	15.1	13.0	13.9	122	83	102	35	31	33	432	288	365[a]	400	328	370[a]
L	1	43.8	41.2	42.8	13.5	12.7	13.1	117	85	101	36	32	34	416	304	363[a]	408	336	379[a]
				42.9			13.6			103			34			367			380
				42.9			14.1			106			33			355			378
				100.0			96.5			97.2			103.0			103.4			100.5
				99.5			95.1			97.2			91.9			96.8			92.2

[a] For one or more specimens which tore beyond the 3/8-inch limit.

TABLE XI

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, points Max.	Bursting Strength, points Min.	Bursting Strength, points Av.	G. E. Puncture, units Max.	G. E. Puncture, units Min.	G. E. Puncture, units Av.	Max.	Mi
											Mill I--42-lb. Linerboard								
145813	I-159	WFlS	3/ 1/51	2/24/51	1	43.2	42.4	42.7	13.8	12.3	13.0	127	90	110	34	30	32	368	28
145860	I-160	WFlS	3/ 6/51	2/27/51	1	43.0	42.0	42.4	14.2	12.8	13.7	131	96	114	37	32	34	424	30
145960	I-161	WFlS	3/13/51	3/ 7/51	1	43.2	40.4	42.0	15.3	13.7	14.2	117	72	93	35	29	32	416	28
146019	I-162	WFlS	3/19/51	3/13/51	1	44.6	42.0	42.9	15.1	13.8	14.4	120	79	100	36	30	33	392	30
146097	I-163	WFlS	3/26/51	3/15/51	1	43.4	42.0	42.6	13.7	12.2	12.9	120	92	106	33	29	31	360	29
146114	I-164	WFlS	3/27/51	3/20/51	1	43.4	41.8	42.9	15.4	13.6	14.5	117	80	96	35	30	32	384	28
146115	I-165	WFlS	3/27/51	3/23/51	1	43.6	42.2	42.6	15.5	13.6	14.3	115	69	96	36	29	33	392	30
Current Mill Average:								42.6			13.9			102			32		
Cumulative Mill Average:								43.2			13.7			105			35		
Mill Factor, %:								98.6			102.2			97.1			91.4		
Mill Index, %:								98.8			97.2			96.2			86.5		

TABLE XII

Mill J--42-lb. Linerboard

145850	J-262	B.F.	3/ 5/51	2/22/51	1	44.0	42.4	43.3	14.0	12.6	13.3	117	92	104	39	31	35	432	3
145851	J-263	B.F.	3/ 5/51	2/22/51	1	43.8	42.0	42.8	13.6	11.8	13.1	124	92	107	38	34	36	408	3
145927	J-264	B.F.	3/12/51	3/ 4/51	1	43.8	42.0	42.8	14.2	13.2	13.8	111	76	100	36	31	34	432	3
145928	J-265	B.F.	3/12/51	3/ 5/51	1	43.8	42.0	43.1	14.8	13.7	14.2	129	88	104	35	31	32	464	3
146046	J 266	B.F.	3/21/51	3/16/51	1	44.0	41.2	42.7	15.1	13.0	13.9	122	83	102	35	31	33	432	2
146047	J-267	B.F.	3/21/51	3/17/51	1	43.8	41.2	42.8	13.5	12.7	13.1	117	85	101	36	32	34	416	3
Current Mill Average:								42.9			13.6			103			34		
Cumulative Mill Average:								42.9			14.1			106			33		
Mill Factor, %:								100.0			96.5			97.2			103.0		
Mill Index, %:								99.5			95.1			97.2			91.9		

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XIII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet					
													In			Across		
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
							Mill L--42-lb. Linerboard											
1	43.6	42.0	42.7	14.3	12.7	13.7	124	77	106	39	34	37	448	328	375	416	336	389[a]
1	43.0	41.0	42.2	14.1	12.7	13.6	131	77	101	40	32	36	432	344	377[a]	408	352	386[a]
1	44.2	41.6	42.5	14.2	11.8	13.2	143	79	107	36	30	33	424	304	343[a]	400	336	377[a]
1	44.4	42.0	43.0	14.2	12.4	13.5	127	78	103	38	32	36	400	312	374[a]	448	352	393[a]
1	44.0	41.0	42.8	13.6	11.2	12.7	121	81	103	38	32	34	400	312	367	464	352	391[a]
			42.6			13.3			104			35			367			387
			43.3			13.7			105			36			357			393
			98.4			97.1			99.0			97.2			102.8			98.5
			98.8			93.0			98.1			94.6			96.8			93.9

TABLE XIV

Mill E--44/46-lb. Drum Linerboard

1	50.4	47.8	49.2	16.1	13.8	14.9	120	76	99	49	40	43	528	424	487[a]	456	360	425[a]
1	50.2	47.6	48.5	15.3	13.5	14.2	128	69	102	46	40	42	480	384	455[a]	480	352	405[a]
1	49.6	47.4	49.0	14.8	13.7	14.4	125	82	106	43	37	39	504	400	457[a]	488	392	430[a]
1	48.8	46.2	47.8	16.2	14.8	15.5	109	84	98	47	40	44	480	392	437[a]	480	344	419[a]
1	50.6	46.8	48.5	16.3	14.8	15.8	102	77	90	48	41	44	552	400	471[a]	488	336	417[a]
1	49.8	45.8	48.1	15.4	13.5	14.6	120	79	100	45	38	41	496	416	447[a]	464	368	417[a]
1	48.8	45.0	47.5	15.5	14.2	15.0	115	82	94	45	39	42	512	392	453	464	344	397[a]
1	49.6	45.8	47.8	15.6	13.6	14.5	120	77	101	44	38	40	512	424	469[a]	472	384	434[a]
1	49.8	47.0	48.5	15.3	14.0	14.9	119	76	98	42	36	39	512	432	469[a]	432	336	398[a]
			48.3			14.9			99			42			461			416
			47.1			14.2			99			41			448			432
			102.5			104.9			100.0			102.4			102.9			96.3

[a] For one or more specimens which tore beyond the 3/8-inch limit.

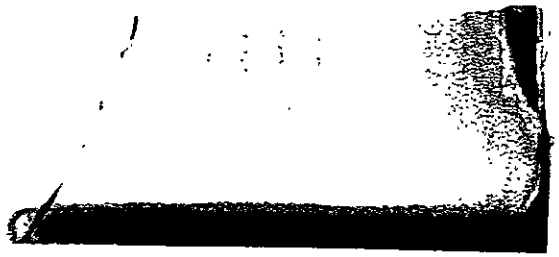


TABLE XIII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmer	
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	In Min.
Mill L--42-lb. Linerboard																			
145810	L-12		3/ 1/51	2/17/51	1	43.6	42.0	42.7	14.3	12.7	13.7	124	77	106	39	34	37	448	328
145849	L-13		3/ 5/51	2/22/51	1	43.0	41.0	42.2	14.1	12.7	13.6	131	77	101	40	32	36	432	344
145929	L-14		3/12/51	3/ 5/51	1	44.2	41.6	42.5	14.2	11.8	13.2	143	79	107	36	30	33	424	304
146045	L-15		3/21/51	3/11/51	1	44.4	42.0	43.0	14.2	12.4	13.5	127	78	103	38	32	36	400	312
146131	L-16		3/29/51	3/23/51	1	44.0	41.0	42.8	13.6	11.2	12.7	121	81	103	38	32	34	400	312
Current Mill Average:								42.6			13.3			104			35		
Cumulative Mill Average:								43.3			13.7			105			36		
Mill Factor, %:								98.4			97.1			99.0			97.2		
Mill Index, %:								98.8			93.0			98.1			94.6		

TABLE XIV

Mill E--44/46-lb. Drum Linerboard

145814	E-230	W.F.	3/ 1/51	2/27/51	1	50.4	47.8	49.2	16.1	13.8	14.9	120	76	99	49	40	43	528	424
145854	E-231	W.F.	3/ 5/51	3/ 2/51	1	50.2	47.6	48.5	15.3	13.5	14.2	128	69	102	46	40	42	480	384
145895	E-232	W.F.	3/ 8/51	3/ 5/51	1	49.6	47.4	49.0	14.8	13.7	14.4	125	82	106	43	37	39	504	400
145915	E-233	W.F.	3/ 9/51	3/ 7/51	1	48.8	46.2	47.8	16.2	14.8	15.5	109	84	98	47	40	44	480	392
145993	E-234	W.F.	3/16/51	3/12/51	1	50.6	46.8	48.5	16.3	14.8	15.8	102	77	90	48	41	44	552	400
146020	E-235	W.F.	3/19/51	3/15/51	1	49.8	45.8	48.1	15.4	13.5	14.6	120	79	100	45	38	41	496	416
146042	E-236	W.F.	3/21/51	3/19/51	1	48.8	45.0	47.5	15.5	14.2	15.0	115	82	94	45	39	42	512	392
146132	E-237	W.F.	3/29/51	3/26/51	1	49.6	45.8	47.8	15.6	13.6	14.5	120	77	101	44	38	40	512	424
146138	E-238	W.F.	3/30/51	3/27/51	1	49.8	47.0	48.5	15.3	14.0	14.9	119	76	98	42	36	39	512	432
Current Mill Average:								48.3			14.9			99			42		
Cumulative Mill Average:								47.1			14.2			99			41		
Mill Factor, %:								102.5			104.9			100.0			102.4		

[1] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XV, the atmospheric conditions used prior to and during the testing period varied considerably.

TABLE XV

Mill Code	Preconditioning R.H., %	Temp., ° F.	Time, hr.	Conditioning R.H., %	Temp., ° F.	Time, hr.
A	No preconditioning			48-75	69-84	48-72
B	37-57	70-77	1/2-24	36-90	70	1/2-24
C	No samples submitted					
D	30-31	76-77	8	50-53	73-74	16
E*	No preconditioning			35-67	78-84	--
F	No preconditioning			No conditioning		
G	No preconditioning			50	73	24-48
H	No preconditioning			50	73	24
I	No preconditioning			52-63	73-78	--
J	No preconditioning			49-51	73	1/2
L	No preconditioning			34-79	68-85	--

* Drum linerboard.

A summary of the mill comparisons for the current period as compared with the previous period may be seen in Tables XVI and XVII respectively. The comparison for the various mills is given in Tables XVIII to XXVIII, inclusive, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XXIX. In all the comparisons given in Tables XVI to XXIX, inclusive, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XVI and XVII indicates that in the majority of cases there is good agreement between the mill and Institute data. Table XVI shows the average difference encountered in the comparison of Institute and mill results for the sample lots submitted by each mill for the current period, as well as the maximum difference encountered in comparing the Institute and mill test results for a given sample lot. In Table XVII, the average differences shown for each test in Table XVI have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XVII that the maximum variation between the average basis weight results of the Institute and those of a given mill on corresponding samples is two per cent for the current period. This figure is smaller than the maximum variation of three per cent for the preceding two periods. Further, it may be noted that the average basis weight results for Mills F and L are lower than those for the Institute, whereas the results for Mills B, D, G, H, and J are higher and the results for Mills A and I are the same. In general, the agreement in basis weight results is very good for the current period.

The maximum variation in caliper for the current period is six per cent. Compared with the values for the Institute, the average results for Mills B, D, F, G, H, I, J, and L are lower, and the average result for Mill A is higher. None of these differences appear to be exceptionally large with the possible exception of the variation for Mill F.

It may be noted in Table XVII that the bursting strength results show a maximum variation of seven per cent for the current period. The average results for Mills B, H, and I are higher than those for the Institute, whereas the results for Mills A, D, G, and J are lower, and the results for Mills F and L are the same as those for the Institute. The agreement in bursting strength results is good for the majority of the mills. However, the variation for Mills I and J appear to be considerably larger than those for most of the other mills.

The G. E. puncture results exhibit a maximum variation of nine per cent for the current period. Compared with the values for the Institute, the results for Mills A, B, F, G, and J are higher, and the results for Mills H and I are lower. The agreement between the Institute and mill results is good with the exception of the variation for Mill I.

It may be seen in Table XVI that the average machine direction tear results for Mills A and J are higher than those for the Institute, whereas the average results for Mills B, F, G, H, I, and L are lower and the average result for Mill D is the same. The maximum variation for the current period is thirteen per cent. The differences encountered for Mills B and L appear to be excessive.

With regard to the across-machine direction tear results, it may be noted that the average results for Mills A, D, and J are higher than those for the Institute, whereas the average results for Mills B, F, G, H, I, and L are lower. A maximum variation of eight per cent is noted for the current period. None of the differences encountered appear to be inordinate with the possible exception of the difference for Mill L.

TABLE XVI

SUMMARY OF TEST RESULT COMPARISONS
(Average Mill and Institute Results)

Mills*	A	B	C	D	E	F	G	H	I	J	L
No. Samples Compared	10	16	0	13	0	6	6	4	7	6	5
Basis Weight											
Institute	43.0	43.4	—	42.8	—	41.7	42.7	42.7	42.6	42.9	42.6
Mill	43.0	43.7	—	43.1	—	41.4	43.0	43.4	42.6	43.1	42.5
Av. Diff.**	0.0	+0.3	—	+0.3	—	-0.3	+0.3	+0.7	0.0	+0.2	-0.1
Max. Diff.***	-0.7	+0.8	—	+0.8	—	-0.9	+0.8	+1.1	+1.0	+0.6	+0.7
Caliper											
Institute	12.8	13.9	—	12.7	—	12.6	13.6	13.4	13.9	13.6	13.3
Mill	12.9	13.8	—	12.4	—	11.9	13.2	13.0	13.4	13.4	13.1
Av. Diff.**	+0.1	-0.1	—	-0.3	—	-0.7	-0.4	-0.4	-0.5	-0.2	-0.2
Max. Diff.***	+0.6	±0.4	—	-0.6	—	-1.1	-0.6	-0.5	-0.6	-0.5	-0.8
Bursting Strength											
Institute	112	101	—	113	—	103	101	104	102	103	104
Mill	109	102	—	110	—	103	100	107	109	98	104
Av. Diff.**	-3	+1	—	-3	—	0	-1	+3	+7	-5	0
Max. Diff.***	-9	-8	—	-9	—	-4	-6	+6	+11	-8	+4
G. E. Puncture											
Institute	34	33	—	37	—	39	35	34	32	34	35
Mill	36	35	—	—	—	40	36	32	29	35	—
Av. Diff.**	+2	+2	—	—	—	+1	+1	-2	-3	+1	—
Max. Diff.***	+4	+3	—	—	—	±5	+3	-3	-5	+3	—
Tearing Strength, in											
Institute	353	361	—	395	—	372	342	360	339	367	367
Mill	370	314	—	395	—	354	325	329	336	389	318
Av. Diff.**	+17	-47	—	0	—	-18	-17	-31	-3	+22	-49
Max. Diff.***	+34	-64	—	±47	—	-63	-36	-55	-26	+46	-84
Tearing Strength, across											
Institute	395	400	—	416	—	415	366	393	405	380	387
Mill	416	375	—	433	—	396	360	373	397	407	356
Av. Diff.**	+21	-25	—	+17	—	-19	-6	-20	-8	+27	-31
Max. Diff.***	+32	-62	—	+57	—	-55	-25	-29	-27	+44	-62

* Comparison based on averages involves only those samples on which mill test data were submitted.

** Average difference is the difference between the Institute mill average and the mill average based on mill test data.

*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XVII

SUMMARY OF TEST RESULTS—COMPARISON BY PERIODS

	Average Difference, %					
	Basis Weight	Caliper	Bursting Strength	G. E. Puncture	Tearing Strength, in	Tearing Strength, across
Mill A						
Current period	0	+0.8	-3	+6	+5	+5
44th period	+1	+2	-2	0	+2	+2
43rd period	+0.7	0	+5	+3	-3	-2
Mill B						
Current period	+0.7	-0.7	+1	+6	-13	-6
44th period	0	-1	-0.9	+6	-17	-13
43rd period	-0.2	+0.7	-0.9	+6	-10	-5
Mill C						
Current period	--	--	--	--	--	--
44th period	-0.7	-2	+4	+3	-6	-4
43rd period	-2	-2	+3	-7	-16	-10
Mill D						
Current period	+0.7	-2	-3	—	0	+4
44th period	+0.2	-3	-0.9	—	+1	+5
43rd period	0	-2	+0.9	—	-3	+1
Mill E						
Current period	--	--	--	--	--	--
44th period	--	--	--	--	--	--
43rd period	--	--	--	--	--	--
Mill F						
Current period	-0.7	-6	0	+3	-5	-5
44th period	-0.5	-4	+5	-2	-3	-2
43rd period	-2	-5	+5	-2	-9	-6
Mill G						
Current period	+0.7	-3	-1	+3	-5	-2
44th period	+0.9	-1	0	0	-3	+3
43rd period	-0.2	-0.7	-3	0	-13	-2
Mill H						
Current period	+2	-3	+3	-6	-9	-5
44th period	+2	-2	+2	-3	-8	-7
43rd period	+0.7	-2	+4	-3	-7	-5
Mill I						
Current period	0	-4	+7	-9	-0.9	-2
44th period	-1	-4	+7	-12	-1	-2
43rd period	+3	-5	+8	-14	-7	+2
Mill J						
Current period	+0.5	-1	-5	+3	+6	+7
44th period	+0.7	-1	-6	+9	+0.8	+5
43rd period	+0.7	0	-3	-6	+4	+4
Mill L						
Current period	-0.2	-2	0	--	-13	-8
44th period	-1	-0.7	+1	--	-18	-12
43rd period	-3	-4	-2	--	--	--

TABLE XVIII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951
Institute Data versus Mill Data

ch. o.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
							Mill A--42-lb. Linerboard											
2	42.4	42.5	+0.1	12.7	13.0	+0.3	101	106	+5	33	34	+1	382[a]	370	-12	380[a]	388	+8
2	42.4	42.3	-0.1	12.9	13.0	+0.1	104	107	+3	32	35	+3	343[a]	366	+23	371[a]	397	+26
2	43.3	43.2	-0.1	14.0	13.9	-0.1	112	109	-3	33	35	+2	372[a]	390	+18	408[a]	415	+7
2	43.4	43.3	-0.1	13.9	13.9	0.0	112	111	-1	33	36	+3	367[a]	385	+18	417[a]	419	+2
L	42.5	42.9	+0.4	13.0	13.0	0.0	116	111	-5	33	34	+1	310	339	+29	386[a]	412	+26
L	42.7	43.1	+0.4	12.9	13.0	+0.1	118	113	-5	34	34	0	308	342	+34	373[a]	405	+32
2	44.6	43.9	-0.7	12.5	12.7	+0.2	118	109	-9	36	37	+1	365[a]	375	+10	409[a]	434	+25
2	44.4	43.9	-0.5	12.4	12.7	+0.3	117	109	-8	35	36	+1	372	385	+13	417[a]	439	+22
2	42.1	42.6	+0.5	11.6	12.2	+0.6	111	107	-4	34	37	+3	359[a]	367	+8	395	427	+32
2	42.2	42.7	+0.5	11.9	12.2	+0.3	113	109	-4	34	38	+4	355[a]	377	+22	399[a]	422	+23
	43.0	43.0	0.0	12.8	12.9	+0.1	112	109	-3	34	36	+2	353	370	+17	395	416	+21

dings for one or more specimens which tore beyond the 3/8-inch limit.

ge" data are calculated from the totals of the individual readings.

TABLE XVIII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951
Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf g./sh. In		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill A--42-lb. Linerboard																			
145811	A-218	WF1S	2/19/51	2	42.4	42.5	+0.1	12.7	13.0	+0.3	101	106	+5	33	34	+1	382[a]	370	-12
145812	A-219	WF1S	2/20/51	2	42.4	42.3	-0.1	12.9	13.0	+0.1	104	107	+3	32	35	+3	343[a]	366	+23
145847	A-220	WF1S	2/28/51	2	43.3	43.2	-0.1	14.0	13.9	-0.1	112	109	-3	33	35	+2	372[a]	390	+18
145848	A-221	WF1S	2/28/51	2	43.4	43.3	-0.1	13.9	13.9	0.0	112	111	-1	33	36	+3	367[a]	385	+18
145918	A-222	WF1S	3/ 5/51	1	42.5	42.9	+0.4	13.0	13.0	0.0	116	111	-5	33	34	+1	310	339	+29
145919	A-223	WF1S	3/ 5/51	1	42.7	43.1	+0.4	12.9	13.0	+0.1	118	113	-5	34	34	0	308	342	+34
146081	A-224	WF1S	3/17/51	2	44.6	43.9	-0.7	12.5	12.7	+0.2	118	109	-9	36	37	+1	365[a]	375	+10
146082	A-225	WF1S	3/17/51	2	44.4	43.9	-0.5	12.4	12.7	+0.3	117	109	-8	35	36	+1	372	385	+13
146095	A-226	WF1S	3/18/51	2	42.1	42.6	+0.5	11.6	12.2	+0.6	111	107	-4	34	37	+3	359[a]	367	+8
146096	A-227	WF1S	3/18/51	2	42.2	42.7	+0.5	11.9	12.2	+0.3	113	109	-4	34	38	+4	355[a]	377	+22
Current Mill Average:					43.0	43.0	0.0	12.8	12.9	+0.1	112	109	-3	34	36	+2	353	370	+17

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet					
												In			Across		
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill B--42-lb. Linerboard																	
41.7	41.8	+0.1	13.4	13.3	-0.1	110	102	-8	30	31	+1	318[a]	283	-35	377[a]	341	-36
41.2	41.6	+0.4	13.2	13.2	0.0	103	102	-1	31	31	0	337	293	-44	383[a]	321	-62
42.0	42.0	0.0	13.4	13.0	-0.4	105	103	-2	31	31	0	347[a]	283	-64	373[a]	336	-37
43.3	43.3	0.0	13.7	13.5	-0.2	106	104	-2	33	35	+2	399[a]	345	-54	405[a]	396	-9
43.0	43.4	+0.4	13.8	13.7	-0.1	100	102	+2	34	35	+1	359[a]	313	-46	408[a]	387	-21
42.5	42.7	+0.2	13.9	13.6	-0.3	96	100	+4	34	36	+2	357[a]	330	-27	399[a]	401	+2
42.6	43.4	+0.8	13.7	13.6	-0.1	99	100	+1	33	34	+1	349[a]	321	-28	413[a]	393	-20
42.4	43.2	+0.8	13.8	13.8	0.0	96	101	+5	33	34	+1	353	305	-48	379[a]	367	-12
44.6	45.0	+0.4	14.2	14.4	+0.2	101	103	+2	35	36	+1	367[a]	327	-40	415[a]	379	-36
44.2	45.0	+0.8	14.0	14.4	+0.4	102	102	0	34	36	+2	369	321	-48	416[a]	393	-23
44.5	45.0	+0.5	14.3	14.4	+0.1	98	101	+3	34	36	+2	376[a]	317	-59	396[a]	374	-22
45.1	44.8	-0.3	14.2	14.2	0.0	102	102	0	35	36	+1	376[a]	317	-59	422[a]	405	-17
44.4	44.6	+0.2	14.3	14.0	-0.3	101	103	+2	34	37	+3	366[a]	321	-45	405[a]	382	-23
44.1	44.4	+0.3	14.2	14.0	-0.2	103	102	-1	34	37	+3	370	315	-55	396[a]	381	-15
44.4	44.8	+0.4	14.2	14.1	-0.1	100	102	+2	34	37	+3	359	320	-39	405[a]	371	-34
44.6	44.8	+0.2	14.0	14.1	+0.1	99	103	+4	35	37	+2	374	319	-55	408[a]	378	-30
43.4	43.7	+0.3	13.9	13.8	-0.1	101	102	+1	33	35	+2	361	314	-47	400	375	-25

ings for one or more specimens which tore beyond the 3/8-inch limit.

' data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf g./sh		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	In Mill	Diff.
Mill B--42-lb. Linerboard																			
145896	B-367	WF1S	3/ 1/51	1	41.7	41.8	+0.1	13.4	13.3	-0.1	110	102	-8	30	31	+1	318[a]	283	-35
145897	B-368	WF1S	3/ 1/51	1	41.2	41.6	+0.4	13.2	13.2	0.0	103	102	-1	31	31	0	337	293	-44
145898	B-369	WF1S	3/ 1/51	1	42.0	42.0	0.0	13.4	13.0	-0.4	105	103	-2	31	31	0	347[a]	283	-64
145899	B-370	WF1S	3/ 1/51	1	43.3	43.3	0.0	13.7	13.5	-0.2	106	104	-2	33	35	+2	399[a]	345	-54
145956	B-371	WF1S	3/ 4/51	1	43.0	43.4	+0.4	13.8	13.7	-0.1	100	102	+2	34	35	+1	359[a]	313	-46
145957	B-372	WF1S	3/ 4/51	1	42.5	42.7	+0.2	13.9	13.6	-0.3	96	100	+4	34	36	+2	357[a]	330	-27
145958	B-373	WF1S	3/ 4/51	1	42.6	43.4	+0.8	13.7	13.6	-0.1	99	100	+1	33	34	+1	349[a]	321	-28
145959	B-374	WF1S	3/ 4/51	1	42.4	43.2	+0.8	13.8	13.8	0.0	96	101	+5	33	34	+1	353	305	-48
146145	B-375	WF1S	3/23/51	1	44.6	45.0	+0.4	14.2	14.4	+0.2	101	103	+2	35	36	+1	367[a]	327	-40
146146	B-376	WF1S	3/23/51	1	44.2	45.0	+0.8	14.0	14.4	+0.4	102	102	0	34	36	+2	369	321	-48
146147	B-377	WF1S	3/23/51	1	44.5	45.0	+0.5	14.3	14.4	+0.1	98	101	+3	34	36	+2	376[a]	317	-59
146148	B-378	WF1S	3/23/51	1	45.1	44.8	-0.3	14.2	14.2	0.0	102	102	0	35	36	+1	376[a]	317	-59
146149	B-379	WF1S	3/25/51	1	44.4	44.6	+0.2	14.3	14.0	-0.3	101	103	+2	34	37	+3	366[a]	321	-45
146150	B-380	WF1S	3/25/51	1	44.1	44.4	+0.3	14.2	14.0	-0.2	103	102	-1	34	37	+3	370	315	-55
146151	B-381	WF1S	3/25/51	1	44.4	44.8	+0.4	14.2	14.1	-0.1	100	102	+2	34	37	+3	359	320	-39
146152	B-382	WF1S	3/25/51	1	44.6	44.8	+0.2	14.0	14.1	+0.1	99	103	+4	35	37	+2	374	319	-55
Current Mill Average:					43.4	43.7	+0.3	13.9	13.8	-0.1	101	102	+1	33	35	+2	361	314	-47

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet					
												In			Across		
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill C--42-lb. Linerboard																	
No samples submitted.																	

TABLE XXI

Mill D--42-lb. Linerboard

43.9	44.0	+0.1	13.6	13.3	-0.3	109	107	-2	38	410[a]	383	-27	431[a]	408	-23
43.4	43.4	0.0	13.1	12.8	-0.3	116	110	-6	39	400[a]	376	-24	432[a]	411	-21
42.9	42.4	-0.5	12.8	12.6	-0.2	108	106	-2	39	415[a]	393	-22	427[a]	443	+16
43.0	43.7	+0.7	12.4	12.0	-0.4	115	111	-4	37	387	389	+2	422[a]	436	+14
43.2	44.0	+0.8	12.4	11.9	-0.5	114	110	-4	35	395[a]	394	-1	401[a]	429	+28
42.3	42.4	+0.1	12.4	11.9	-0.5	113	107	-6	36	393[a]	399	+6	426[a]	432	+6
42.3	42.5	+0.2	12.4	12.0	-0.4	109	108	-1	38	377[a]	402	+25	398[a]	441	+43
43.1	43.5	+0.4	13.1	12.5	-0.6	111	110	-1	41	423[a]	376	-47	425[a]	413	-12
41.2	42.0	+0.8	12.1	11.6	-0.5	113	109	-4	36	387[a]	412	+25	394[a]	426	+32
42.9	43.3	+0.4	12.6	12.2	-0.4	112	109	-3	38	401[a]	414	+13	407[a]	463	+56
42.5	43.0	+0.5	13.2	13.0	-0.2	119	110	-9	37	375	422	+47	402[a]	459	+57
43.5	43.9	+0.4	12.7	12.4	-0.3	120	117	-3	36	400[a]	407	+7	424[a]	464	+40
42.6	42.4	-0.2	12.9	12.8	-0.1	115	113	-2	36	377[a]	363	-14	422[a]	401	-21
42.8	43.1	+0.3	12.7	12.4	-0.3	113	110	-3	37	395	395	0	416	433	+17

ings for one or more specimens which tore beyond the 3/8-inch limit.

' data are calculated from the totals of the individual readings.

TABLE XX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb. IPC	Basis Weight, lb. Mill	Basis Weight, lb. Diff.	Caliper, points IPC	Caliper, points Mill	Caliper, points Diff.	Bursting Strength, points IPC	Bursting Strength, points Mill	Bursting Strength, points Diff.	G. E. Puncture, units IPC	G. E. Puncture, units Mill	G. E. Puncture, units Diff.	Elmendor g./s In IPC	Elmendor g./s In Mill	Elmendor g./s In Diff.
Mill C--42-lb. Linerboard																			
No samples submitted.																			

TABLE XXI

Mill D--42-lb. Linerboard

145884	D-364	D F	3/ 4/51	4	43.9	44.0	+0.1	13.6	13.3	-0.3	109	107	-2	38	410[a]	383	-27
145900	D-365	D.F.	3/ 5/51	4	43.4	43.4	0.0	13.1	12.8	-0.3	116	110	-6	39	400[a]	376	-24
145893	D-366	D.F.	3/ 6/51	4	42.9	42.4	-0.5	12.8	12.6	-0.2	108	106	-2	39	415[a]	393	-22
145894	D-367	W.F.	3/ 7/51	4	43.0	43.7	+0.7	12.4	12.0	-0.4	115	111	-4	37	387	389	+2
145926	D-368	W F.	3/ 8/51	4	43.2	44.0	+0.8	12.4	11.9	-0.5	114	110	-4	35	395[a]	394	-1
145961	D-369	W.F	3/10/51	4	42.3	42.4	+0.1	12.4	11.9	-0.5	113	107	-6	36	393[a]	399	+6
145962	D-370	W.F.	3/11/51	4	42.3	42.5	+0.2	12.4	12.0	-0.4	109	108	-1	38	377[a]	402	+25
145973	D-371	D.F.	3/12/51	4	43.1	43.5	+0.4	13.1	12.5	-0.6	111	110	-1	41	423[a]	376	-47
146008	D-372	W.F.	3/13/51	4	41.2	42.0	+0.8	12.1	11.6	-0.5	113	109	-4	36	387[a]	412	+25
146009	D-373	W.F.	3/14/51	4	42.9	43.3	+0.4	12.6	12.2	-0.4	112	109	-3	38	401[a]	414	+13
146021	D-374	W.F.	3/15/51	4	42.5	43.0	+0.5	13.2	13.0	-0.2	119	110	-9	37	375	422	+47
146123	D-375	W.F.	3/24/51	4	43.5	43.9	+0.4	12.7	12.4	-0.3	120	117	-3	36	400[a]	407	+7
146153	D-376	D.F.	3/28/51	4	42.6	42.4	-0.2	12.9	12.8	-0.1	115	113	-2	36	377[a]	363	-14
Current Mill Average:					42.8	43.1	+0.3	12.7	12.4	-0.3	113	110	-3	37	395	395	0

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

Mach. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill E--42-lb. Linerboard																		
	No samples submitted.																	

TABLE XXIII

Mill F--42-lb. Linerboard

--	41.5	41.5	0.0	12.3	11.8	-0.5	110	111	+1	36	39	+3	370[a]	331	-39	438[a]	383	-55
--	42.5	42.3	-0.2	12.2	11.9	-0.3	110	112	+2	40	42	+2	344	371	+27	397[a]	415	+18
--	43.2	43.6	+0.4	13.1	13.0	-0.1	103	99	-4	41	46	+5	375	417	+42	423[a]	465	+42
--	41.6	41.4	-0.2	12.7	11.7	-1.0	98	101	+3	39	41	+2	355	320	-35	412[a]	365	-47
--	41.0	40.1	-0.9	12.5	11.8	-0.7	95	97	+2	40	39	-1	418[a]	355	-63	415[a]	377	-38
--	40.3	39.5	-0.8	12.4	11.3	-1.1	100	101	+1	40	35	-5	369[a]	328	-41	405[a]	373	-32
	41.7	41.4	-0.3	12.6	11.9	-0.7	103	103	0	39	40	+1	372	354	-18	415	396	-19

TABLE XXIV

Mill G--42-lb. Linerboard

	43.1	42.8	-0.3	14.4	13.9	-0.5	99	96	-3	38	38	0	351[a]	337	-14	384[a]	359	-25
	42.9	42.8	-0.1	13.2	13.2	0.0	102	102	0	36	38	+2	339	335	-4	377[a]	373	-4
	42.3	42.9	+0.6	14.3	13.7	-0.6	104	98	-6	34	36	+2	345[a]	318	-27	365[a]	367	+2
	43.3	44.1	+0.8	13.1	12.9	-0.2	110	110	0	36	39	+3	353[a]	347	-6	382[a]	383	+1
	42.8	42.8	0.0	13.3	12.8	-0.5	97	100	+3	32	34	+2	335[a]	323	-12	353[a]	347	-6
	42.0	42.4	+0.4	13.0	12.6	-0.4	96	95	-1	31	32	+1	327[a]	291	-36	337[a]	331	-6
	42.7	43.0	+0.3	13.6	13.2	-0.4	101	100	-1	35	36	+1	342	325	-17	366	360	-6

dings for one or more specimens which tore beyond the 3/8-inch limit.

e" data are calculated from the totals of the individual readings.

TABLE XXII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf, g./In		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill E--42-lb. Linerboard																			
No samples submitted.																			

TABLE XXIII

Mill F--42-lb. Linerboard

145881	F-16	W.F.	2/20/51	--	41.5	41.5	0.0	12.3	11.8	-0.5	110	111	+1	36	39	+3	370[a]	331	-39
145882	F-17	W.F.	2/22/51	--	42.5	42.3	-0.2	12.2	11.9	-0.3	110	112	+2	40	42	+2	344	371	+27
145883	F-18	W.F.	2/27/51	--	43.2	43.6	+0.4	13.1	13.0	-0.1	103	99	-4	41	46	+5	375	417	+42
145972	F-19	W.F.	3/ 2/51	--	41.6	41.4	-0.2	12.7	11.7	-1.0	98	101	+3	39	41	+2	355	320	-35
146043	F-20	W.F.	3/ 5/51	--	41.0	40.1	-0.9	12.5	11.8	-0.7	95	97	+2	40	39	-1	418[a]	355	-63
146044	F-21	W.F.	3/13/51	--	40.3	39.5	-0.8	12.4	11.3	-1.1	100	101	+1	40	35	-5	369[a]	328	-41
Current Mill Average:					41.7	41.4	-0.3	12.6	11.9	-0.7	103	103	0	39	40	+1	372	354	-18

TABLE XXIV

Mill G--42-lb. Linerboard

145852	G-330	WFL	3/ 1/51	1	43.1	42.8	-0.3	14.4	13.9	-0.5	99	96	-3	38	38	0	351[a]	337	-14
145853	G-331	WFL	3/ 1/51	1	42.9	42.8	-0.1	13.2	13.2	0.0	102	102	0	36	38	+2	339	335	-4
145916	G-332	WFL	3/ 4/51	1	42.3	42.9	+0.6	14.3	13.7	-0.6	104	98	-6	34	36	+2	345[a]	318	-27
145917	G-333	WFL	3/ 6/51	1	43.3	44.1	+0.8	13.1	12.9	-0.2	110	110	0	36	39	+3	353[a]	347	-6
146154	G-334	WFL	3/25/51	1	42.8	42.8	0.0	13.3	12.8	-0.5	97	100	+3	32	34	+2	335[a]	323	-12
146155	G-335	WFL	3/25/51	1	42.0	42.4	+0.4	13.0	12.6	-0.4	96	95	-1	31	32	+1	327[a]	291	-36
Current Mill Average:					42.7	43.0	+0.3	13.6	13.2	-0.4	101	100	-1	35	36	+1	342	325	-17

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill H--42-lb. Linerboard																	
42.5	43.1	+0.6	13.3	13.0	-0.3	105	105	0	33	31	-2	345	318	-27	381[a]	367	-14
42.7	43.8	+1.1	13.5	13.2	-0.3	105	108	+3	35	33	-2	369	353	-16	413[a]	397	-16
43.0	43.3	+0.3	13.2	12.9	-0.3	106	107	+1	35	32	-3	371	344	-27	410[a]	381	-29
42.5	43.3	+0.8	13.3	12.8	-0.5	101	107	+6	32	31	-1	355	300	-55	368[a]	346	-22
42.7	43.4	+0.7	13.4	13.0	-0.4	104	107	+3	34	32	-2	360	329	-31	393	373	-20

TABLE XXVI

Mill I--42-lb. Linerboard

42.7	43.2	+0.5	13.0	12.8	-0.2	110	112	+2	32	29	-3	327[a]	334	+7	395[a]	395	0
42.4	42.2	-0.2	13.7	13.1	-0.6	114	121	+7	34	29	-5	351[a]	325	-26	415[a]	394	-21
42.0	43.0	+1.0	14.2	13.9	-0.3	93	104	+11	32	29	-3	344[a]	326	-18	391[a]	391	0
42.9	42.8	-0.1	14.4	13.8	-0.6	100	103	+3	33	29	-4	342[a]	357	+15	411[a]	412	+1
42.6	42.4	-0.2	12.9	12.4	-0.5	106	113	+7	31	30	-1	330	329	-1	391[a]	379	-12
42.9	42.8	-0.1	14.5	14.0	-0.5	96	105	+9	32	30	-2	339[a]	337	-2	417[a]	390	-27
42.6	42.0	-0.6	14.3	13.9	-0.4	96	103	+7	33	28	-5	341[a]	349	+8	412[a]	415	+3
42.6	42.6	0.0	13.9	13.4	-0.5	102	109	+7	32	29	-3	339	336	-3	405	397	-8

s for one or more specimens which tore beyond the 3/8-inch limit.

data are calculated from the totals of the individual readings.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf, g./In		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill H--42-lb. Linerboard																			
146015	H-235	WFlS	2/11/51	2	42.5	43.1	+0.6	13.3	13.0	-0.3	105	105	0	33	31	-2	345	318	-27
146016	H-236	WFlS	2/12/51	2	42.7	43.8	+1.1	13.5	13.2	-0.3	105	108	+3	35	33	-2	369	353	-16
146017	H-237	WFlS	3/ 2/51	2	43.0	43.3	+0.3	13.2	12.9	-0.3	106	107	+1	35	32	-3	371	344	-27
146018	H-238	WFlS	3/ 3/51	2	42.5	43.3	+0.8	13.3	12.8	-0.5	101	107	+6	32	31	-1	355	300	-55
Current Mill Average:					42.7	43.4	+0.7	13.4	13.0	-0.4	104	107	+3	34	32	-2	360	329	-31

TABLE XXVI

Mill I--42-lb. Linerboard

145813	I-159	WFlS	2/24/51	1	42.7	43.2	+0.5	13.0	12.8	-0.2	110	112	+2	32	29	-3	327[a]	334	+7
145860	I-160	WFlS	2/27/51	1	42.4	42.2	-0.2	13.7	13.1	-0.6	114	121	+7	34	29	-5	351[a]	325	-26
145960	I-161	WFlS	3/ 7/51	1	42.0	43.0	+1.0	14.2	13.9	-0.3	93	104	+11	32	29	-3	344[a]	326	-18
146019	I-162	WFlS	3/13/51	1	42.9	42.8	-0.1	14.4	13.8	-0.6	100	103	+3	33	29	-4	342[a]	357	+15
146097	I-163	WFlS	3/15/51	1	42.6	42.4	-0.2	12.9	12.4	-0.5	106	113	+7	31	30	-1	330	329	-1
146114	I-164	WFlS	3/20/51	1	42.9	42.8	-0.1	14.5	14.0	-0.5	96	105	+9	32	30	-2	339[a]	337	-2
146115	I-165	WFlS	3/23/51	1	42.6	42.0	-0.6	14.3	13.9	-0.4	96	103	+7	33	28	-5	341[a]	349	+8
Current Mill Average:					42.6	42.6	0.0	13.9	13.4	-0.5	102	109	+7	32	29	-3	339	336	-3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXVII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

	Mch. No.	Basis Weight, lb. IPC	Mill	Diff.	Caliper, points IPC	Mill	Diff.	Bursting Strength, points IPC	Mill	Diff.	G. E. Puncture, units IPC	Mill	Diff.	Elmendorf Tear, g./sheet In IPC	Mill	Diff.	Across IPC	Mill	Diff.
								Mill J--42-lb. Linerboard											
'51	1	43.3	43.5	+0.2	13.3	13.1	-0.2	104	101	-3	35	38	+3	382[a]	379	-3	404[a]	405	+1
'51	1	42.8	43.0	+0.2	13.1	13.0	-0.1	107	99	-8	36	38	+2	374[a]	386	+12	392[a]	406	+14
'51	1	42.8	43.2	+0.4	13.8	13.7	-0.1	100	95	-5	34	34	0	351[a]	384	+33	371[a]	398	+27
'51	1	43.1	43.7	+0.6	14.2	14.0	-0.2	104	98	-6	32	34	+2	368[a]	382	+14	366[a]	403	+37
'51	1	42.7	42.8	+0.1	13.9	13.4	-0.5	102	98	-4	33	34	+1	365[a]	393	+28	370[a]	410	+40
'51	1	42.8	42.6	-0.2	13.1	13.2	+0.1	101	97	-4	34	33	-1	363[a]	409	+46	379[a]	423	+44
		42.9	43.1	+0.2	13.6	13.4	-0.2	103	98	-5	34	35	+1	367	389	+22	380	407	+27

TABLE XXVIII

Mill L--42-lb. Linerboard

51	1	42.7	42.6	-0.1	13.7	13.2	-0.5	106	104	-2	37			375	310	-65	389[a]	354	-35
51	1	42.2	41.7	-0.5	13.6	12.8	-0.8	101	104	+3	36			377[a]	322	-55	386[a]	358	-28
51	1	42.5	43.2	+0.7	13.2	12.9	-0.3	107	111	+4	33			343[a]	348	+5	377[a]	385	+8
51	1	43.0	42.8	-0.2	13.5	13.6	+0.1	103	100	-3	36			374[a]	327	-47	393[a]	353	-40
51	1	42.8	42.2	-0.6	12.7	13.1	+0.4	103	101	-2	34			367	283	-84	391[a]	329	-62
		42.6	42.5	-0.1	13.3	13.1	-0.2	104	104	0	35			367	318	-49	387	356	-31

[a] readings for one or more specimens which tore beyond the 3/8-inch limit.

"Average" data are calculated from the totals of the individual readings.

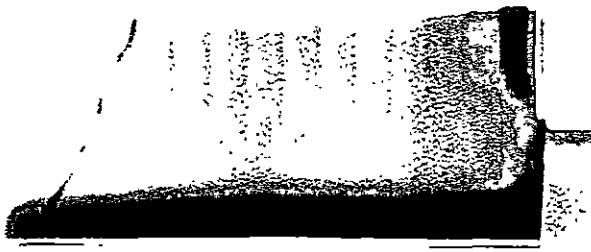


TABLE XXVII

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, In		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Dif
Mill J--42-lb. Linerboard																			
145850	J-262	B.F.	2/22/51	1	43.3	43.5	+0.2	13.3	13.1	-0.2	104	101	-3	35	38	+3	382[a]	379	-3
145851	J-263	B.F.	2/22/51	1	42.8	43.0	+0.2	13.1	13.0	-0.1	107	99	-8	36	38	+2	374[a]	386	+12
145927	J-264	B.F.	3/ 4/51	1	42.8	43.2	+0.4	13.8	13.7	-0.1	100	95	-5	34	34	0	351[a]	384	+33
145928	J-265	B.F.	3/ 5/51	1	43.1	43.7	+0.6	14.2	14.0	-0.2	104	98	-6	32	34	+2	368[a]	382	+14
146046	J-266	B.F.	3/16/51	1	42.7	42.8	+0.1	13.9	13.4	-0.5	102	98	-4	33	34	+1	365[a]	393	+28
146047	J-267	B.F.	3/17/51	1	42.8	42.6	-0.2	13.1	13.2	+0.1	101	97	-4	34	33	-1	363[a]	409	+46
Current Mill Average:					42.9	43.1	+0.2	13.6	13.4	-0.2	103	98	-5	34	35	+1	367	389	+22

TABLE XXVIII

Mill L--42-lb. Linerboard

145810	L-12		2/17/51	1	42.7	42.6	-0.1	13.7	13.2	-0.5	106	104	-2	37			375	310	-65
145849	L-13		2/22/51	1	42.2	41.7	-0.5	13.6	12.8	-0.8	101	104	+3	36			377[a]	322	-55
145929	L-14		3/ 5/51	1	42.5	43.2	+0.7	13.2	12.9	-0.3	107	111	+4	33			343[a]	348	+5
146045	L-15		3/11/51	1	43.0	42.8	-0.2	13.5	13.6	+0.1	103	100	-3	36			374[a]	327	-47
146131	L-16		3/23/51	1	42.8	42.2	-0.6	12.7	13.1	+0.4	103	101	-2	34			367	283	-84
Current Mill Average:					42.6	42.5	-0.1	13.3	13.1	-0.2	104	104	0	35			367	318	-49

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

Basis Weight, lb.			Caliper, points			Bursting Strength, units			G. E. Puncture, units			Elmendorf Tear, g./sheet					
												In			Across		
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill E--44/46-lb. Drum Linerboard																	
49.2	47.6	-1.6	14.9	13.8	-1.1	99	101	+2	43	39	-4	487[a]	357	-130	425[a]	353	-72
48.5	47.2	-1.3	14.2	13.4	-0.8	102	100	-2	42	41	-1	455[a]	430	-25	405[a]	424	+19
49.0	47.9	-1.1	14.4	13.5	-0.9	106	117	+11	39	39	0	457[a]	421	-36	430[a]	396	-34
47.8	47.0	-0.8	15.5	14.3	-1.2	98	96	-2	44	41	-3	437[a]	422	-15	419[a]	409	-10
48.5	47.4	-1.1	15.8	15.3	-0.5	90	94	+4	44	36	-8	471[a]	395	-76	417[a]	369	-48
48.1	47.5	-0.6	14.6	13.3	-1.3	100	104	+4	41	38	-3	447[a]	426	- 21	417[a]	406	-11
47.5	47.2	-0.3	15.0	13.6	-1.4	94	94	0	42	39	-3	463[a]	464	+1	397[a]	436	+39
47.8	47.1	-0.7	14.5	14.0	-0.5	101	97	-4	40	38	-2	469[a]	409	-60	434[a]	370	-64
48.5	47.6	-0.9	14.9	14.1	-0.8	98	90	-8	39	30	-9	469[a]	356	-113	398[a]	315	-83
48.3	47.4	-0.9	14.9	13.9	-1.0	99	99	0	42	38	-4	461	409	-52	416	386	-30

s for one or more specimens which tore beyond the 3/8-inch limit.

ata are calculated from the totals of the individual readings.

TABLE XXIX

SUMMARY OF INDIVIDUAL TEST LOTS--MARCH 1 THROUGH MARCH 31, 1951 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, units			G. E. Puncture, units			Elmendorf, In		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill E--44/46-lb. Drum Linerboard																			
145814	E-230	W.F.	2/27/51	1	49.2	47.6	-1.6	14.9	13.8	-1.1	99	101	+2	43	39	-4	487[a]	357	-130
145854	E-231	W.F.	3/ 2/51	1	48.5	47.2	-1.3	14.2	13.4	-0.8	102	100	-2	42	41	-1	455[a]	430	-25
145895	E-232	W.F.	3/ 5/51	1	49.0	47.9	-1.1	14.4	13.5	-0.9	106	117	+11	39	39	0	457[a]	421	-36
145915	E-233	W.F.	3/ 7/51	1	47.8	47.0	-0.8	15.5	14.3	-1.2	98	96	-2	44	41	-3	437[a]	422	-15
145993	E-234	W.F.	3/12/51	1	48.5	47.4	-1.1	15.8	15.3	-0.5	90	94	+4	44	36	-8	471[a]	395	-76
146020	E-235	W.F.	3/15/51	1	48.1	47.5	-0.6	14.6	13.3	-1.3	100	104	+4	41	38	-3	447[a]	426	- 21
146042	E-236	W.F.	3/19/51	1	47.5	47.2	-0.3	15.0	13.6	-1.4	94	94	0	42	39	-3	463[a]	464	+1
146132	E-237	W.F.	3/26/51	1	47.8	47.1	-0.7	14.5	14.0	-0.5	101	97	-4	40	38	-2	469[a]	409	-60
146138	E-238	W.F.	3/27/51	1	48.5	47.6	-0.9	14.9	14.1	-0.8	98	90	-8	39	30	-9	469[a]	356	-113
Current Mill Average:					48.3	47.4	-0.9	14.9	13.9	-1.0	99	99	0	42	38	-4	461	409	-52

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.